

The opinion in support of the decision being entered today  
is *not* binding precedent of the Board.

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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*Ex parte* MARK H. THENO

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Appeal 2007-2962  
Application 09/691,896  
Technology Center 1600

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Decided: September 28, 2007

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Before DONALD E. ADAMS, ERIC GRIMES, and LORA M. GREEN,  
*Administrative Patent Judges.*

GRIMES, *Administrative Patent Judge.*

**DECISION ON APPEAL**

This is an appeal under 35 U.S.C. § 134 involving claims to a vapor emitting patch. The Examiner has rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

**BACKGROUND**

The Specification describes a patch comprising “a hydrogel base portion and a vapor emitting portion attached to the hydrogel base portion” (Specification 2). The vapor emitting portion includes a vapor-emitting

material and a cellular material (*id.* at 3). Vapor emitting materials “include a variety of materials that emit vapors at ambient temperatures and pressures, such as perfumes, drugs, and pheromones” (*id.*). The patch can be attached to skin and non-living materials by adhesion of the hydrogel base portion thereto (*id.*)

## DISCUSSION

### 1. CLAIMS

Claims 1, 3-8, 10-14, 17-31, 40, and 42-44 are on appeal. Claims 38 and 39 are also pending but have been withdrawn from consideration by the Examiner. We will focus on claim 1, which reads as follows:

1. A vapor emitting patch comprising:
  - a base portion comprising a hydrogel;
  - a cellular structure, comprising a foamed polyolefin, contacting the base portion, the cellular structure comprising a vapor emitting portion; and
  - a vapor emitting material that is a drug stored within the vapor emitting portion.

Thus, claim 1 is directed to a patch comprising a hydrogel, a cellular structure comprising foamed polyolefin, and a vapor emitting material within the cellular structure.

### 2. PRIOR ART

The Examiner relies on the following references:

Fischel-Ghodsian	US 5,455,043	Oct. 3, 1995
Cartmell	US 5,501,661	Mar. 26, 1996
Wick	US 6,010,715	Jan. 4, 2000

### 3. OBVIOUSNESS

Claims 1, 3-8, 10-12, 17-20, 23-27, 29, 30, 40, and 42-44 stand rejected under 35 U.S.C. § 103 as obvious over Cartmell in view of Fischel-Ghodsian. The Examiner relies on Cartmell for teaching a wound dressing comprising a hydrogel material and a porous backing layer comprising a polyolefin foam, the porous layer being moisture and vapor permeable (Answer 3-4). The Examiner finds that, because Cartmell teaches that “the invention is designed to permeate vapor ‘which permits the transpiration of moisture through the wound dressing,’ . . . a skilled artisan would have expected that the invention be used to transport vapors” (*id.* at 4). The Examiner also find that, while Cartmell “does not explicitly state that vapor emitting materials are stored within the foams, . . . it is implicit in the teachings of Cartmell et al., as the foam layer is the layer though which vapor-permeable substances are transferred from the wound to the environment” (*id.* at 4-5).

The Examiner relies on Fischel-Ghodsian for teaching “patches comprised of foams, such as polyolefin . . . foams,” and “that varying the porosity of the cellular structure of the foam is within the skill of the art” (*id.* at 5). The Examiner also relies on Fischel-Ghodsian for describing “active ingredients . . . incorporated in [a] reservoir layer of the patch,” the active ingredients being vapor emitting compounds, such as perfumes, insecticides, and therapeutic agents (*id.*).

The Examiner concludes that it would have been obvious “to modify the polyolefin foams of Cartmell et al. with suitable polymers that possess a diffusion rate limiting membrane layer as taught by Fischel-Ghodsian et al.

because using such polymers (polyolefin foams) will enable one to control the amount and rate of emission of the active agent due to the porosity of the cell sizes of the membrane” (*id.*). The Examiner also finds:

There is sufficient motivation to incorporate a vapor emitting material into a wound dressing. Various active ingredients that were disclosed include insecticides, insect repellants, antihistamines, steroids, and peptides. It would have been obvious to one of ordinary skill in the art to have incorporated these vapor emitting drugs into a wound dressing in order to assist in the healing of the injury or protection of the break in the skin. For example, insecticides can be added for the purpose of warding off disease and germ carrying insects from the open wound. Antihistamines and steroids can be used to inhibit any allergic reaction the wound would have to any foreign allergen. Peptides can be used for their antimicrobial activity in helping to protect the open wound from infection.

(*Id.* at 9.)

Appellant argues that, “in Cartmell, there is no vapor emitting material stored within a vapor emitting portion,” nor is there any “suggestion that the feature of a ‘vapor emitting material stored within the vapor emitting portion’ would be useful or desirable” (Br. 10-11). In particular, Appellant argues that the “‘transpiration of moisture’ functionality of Cartmell et al. teaches away from the device embodiments claimed which include ‘a vapor emitting material stored within the vapor emitting portion,’ and indicate that the storage of a vapor emitting material within the Cartmell et al. bandage is undesirable” (*id.* at 11).

In addition, Appellant argues that Fischel-Ghodsian “does not describe a use of a hydrogel or anything like a hydrogel” (*id.* at 12). Appellant also argues that “there is no motivation to combine a chemical

release structure . . . with a wound dressing to obtain the claimed embodiments of the invention. . . . Thus, the Cartmell et al. and Fischel-Ghodsian patents do not suggest combination and the references do not render the claimed invention embodiments obvious.” (*Id.*)

We reverse the rejection. Cartmell describes a wound dressing comprising “a thin-film layer, preferably composed of polyurethane, an adhesive layer, a porous backing layer, . . . and a hydrogel material” (Cartmell, col. 2, ll. 21-25). The thin-film layer “forms the outer surface of the dressing product” (*id.* at col. 2, ll. 28-32). The hydrogel material “is contained within the center portion of the thin-film layer” (*id.* at col. 2, ll. 64-66). “The gel-like consistency of the hydrogel material creates a bond between the wound dressing and the wound site without creating an actual adhesive attachment that would damage new cell tissue upon removal” (*id.* at col. 2, l. 66, to col. 3, l. 3). As a result, the wound dressing is “adhesive around its perimeter portion, and nonadhesive over the wound site” (*id.* at col. 2, ll. 14-16).

Cartmell also states that the “backing layer is constructed of a porous material comprising a filled polyolefin foam” (*id.* at col. 2, ll. 37-39). This porous backing layer is “moisture- and vapor-permeable . . . , which permits the transpiration of moisture through the wound dressing” (*id.* at col. 2, ll. 17-19). In addition, the thin-film layer may be “perforated throughout in order to improve the moisture- and vapor-permeability of the wound dressing” (*id.* at col. 2, ll. 31-36).

We agree with Appellant that the Examiner has not set forth a prima facie case that Cartmell teaches or suggests including a vapor emitting

material within the porous backing layer. In particular, we do not agree with the Examiner that this is “implicit in the teachings of Cartmell” (Answer 4-5). Although the porous backing layer is vapor-permeable, we do not agree that this implies including a vapor emitting material within this layer.

Fischel-Ghodsian describes “a controlled release device in the form of a laminate” including a diffusion rate limiting membrane adjacent a reservoir layer that incorporates an active compound (Fischel-Ghodsian, col. 3, l. 52, to col. 4, l. 1). The reservoir layer is a porous polymer, such as a polyethylene or polypropylene foam (*id.* at col. 5, ll. 14-22). “The active compound may be any of a number of useful vapor emitting compounds such as perfumes, various fragrances, air fresheners, insecticides, and insect repellants,” as well as therapeutic agents, such as antihistamines, steroids, or peptides (*id.* at col. 4, ll. 1-9). The laminates “are constructed such that the active compound diffuses from the reservoir layer into a diffusion rate limiting membrane layer where the vapor . . . is released into the surrounding environment” (*id.* at col. 4, ll. 12-15).

Fischel-Ghodsian also discloses that the controlled release device may include “an impermeable backing which prevents contact of active compound with the skin and an adhesive layer which allows the device to adhere to wall surfaces, skin, clothing, mucosa tissue, and other items without affecting the release properties” (*id.* at col. 4, ll. 20-26). Fischel-Ghodsian discloses that the “backing material prevents the diffusing active compound from diffusing into the adhesive layer” (*id.* at col. 8, ll. 51-54). Fischel-Ghodsian states that it is “undesirable for the active compound to diffuse in the direction of the adhesive since a) it may be irritating to the skin

or toxic to the body upon absorption and b) the target release point is the environment bound by the diffusion rate limiting membrane” (*id.* at col. 8, ll. 55-60).

We agree with Appellant that the Examiner has not set forth a *prima facie* case that it would have been obvious to include a vapor emitting compound, as described in Fischel-Ghodsian, in the porous backing layer of Cartmell. The Examiner argues that it would have been obvious to incorporate vapor emitting materials, such as insecticides, insect repellants, antihistamines, steroids, and peptides, “into a wound dressing in order to assist in the healing of the injury or protection of the break in the skin” (Answer 9). However, Fischel-Ghodsian describes *preventing* the active compound from diffusing in the direction of the skin by use of an impermeable backing layer (Fischel-Ghodsian, col. 8, 51-60). The Examiner has not adequately explained the basis for including a vapor emitting compound in Cartmell’s patch, despite Fischel-Ghodsian’s teaching that such compounds should not be allowed to contact the skin.

Nor has the Examiner adequately explained why it would have been obvious to combine Cartmell’s hydrogel layer with Fischel-Ghodsian’s patch despite Fischel-Ghodsian’s teaching of an impermeable backing layer. The Examiner has not, for example, shown that the hydrogel would act as an impermeable backing layer preventing vapor emitting compounds from diffusing towards the skin.

“In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art.” *In re Fritch*, 972 F.2d 1260, 1265 (Fed. Cir.

1992). We conclude that the Examiner has not set forth a prima facie case that it would have been obvious to include a vapor emitting compound, as described in Fischel-Ghodsian, in the porous backing layer of Cartmell, nor has the Examiner set forth a prima facie case that it would have been obvious to incorporate the hydrogel layer of Cartmell in the laminate described in Fischel-Ghodsian. Therefore, we reverse the obviousness rejection of claim 1 and of claims 3-8, which directly or indirectly depend from claim 1.

As with claim 1, independent claims 10, 25, 29, and 42-44 are each directed to a patch (or a method of using a patch) comprising a hydrogel, a cellular structure comprising foamed polyolefin, and a vapor emitting material within the cellular structure. Similarly, independent claim 40 is directed to a patch comprising a hydrogel, a foam pad comprising foamed polyolefin, and a vapor emitting material within the pad. Because we conclude that the Examiner has not set forth a prima facie case that it would have been obvious to include a vapor emitting compound, as described in Fischel-Ghodsian, in the porous backing layer of Cartmell, or to incorporate the hydrogel layer of Cartmell in the laminate described in Fischel-Ghodsian, we also reverse the obviousness rejection of claims 10, 25, 29, 40, and 42-44 and of claims 11, 12, 17-20, 23, 24, 26, 27, and 30, which depend from one of claims 10, 25, 29, or 40.

Claims 13, 14, 21, 22, 28, and 31 stand rejected under 35 U.S.C. § 103 as obvious over Cartmell in view of Fischel-Ghodsian and Wick. These claims directly or indirectly depend from one of claims 10, 25, 29, or 40. We have already concluded that the Examiner has not set forth a prima facie



case that Cartmell and Fischel-Ghodsian render claims 10, 25, 29, and 40 obvious. The Examiner relies on Wick for limitations recited in dependent claims, and has not pointed to any disclosure in this reference that would make up for the deficiencies discussed above. Thus, we conclude that the Examiner has not set forth a prima facie case that claims 13, 14, 21, 22, 28, and 31 would have been obvious. We therefore reverse the obviousness rejection of these claims.

REVERSED

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